



SEQUENCE LISTING

<110> Mather, Jennie P.
Bald, Laura N.
Roberts, Penelope E.
Stephan, Jean-Philippe F.

<120> COMPOSITIONS AND METHODS FOR GENERATING
MONOCLONAL ANTIBODIES REPRESENTATIVE OF A SPECIFIC CELL TYPE

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<141> 2000-07-10

<150> 09/218,539

<151> 1998-12-22

<160> 8

<170> FastSEQ for Windows Version 3.0

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<211> 2181

<212> DNA

<213> Rattus rattus

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aga gat ccc tcg acc tcg acc cac gcg tcc gcc ttg ctc ttc tta tcc 96
Arg Asp Pro Ser Thr Ser Thr His Ala Ser Ala Leu Leu Phe Leu Ser
-135 -130 -125 -120

tct cct ttg caa gaa gag aaa ctc ctc gga gac agc agc caa aaa gaa 144
Ser Pro Leu Gln Glu Glu Lys Leu Leu Gly Asp Ser Ser Gln Lys Glu
-115 -110 -105

acc gcg tct acc ttg aca gac tac tga agc gtc tcc tgg aat aag agg 192
Thr Ala Ser Thr Leu Thr Asp Tyr * Ser Val Ser Trp Asn Lys Arg
-100 -95 -90

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Val Ala Arg Leu Gly Ser Ser Ser Gln Arg Arg * Gly Arg Val Trp
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Arg Gly Glu Gly Gly Val Ala Gly Ser Ala Trp Arg Lys Val Ala Cys	
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ggc aca gac ccg acg gcg cag cgc cac agc gcc cgg ggg atc gtg tgt	336
Gly Thr Asp Pro Thr Ala Gln Arg His Ser Ala Arg Gly Ile Val Cys	
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ctt gga aaa aaa agt cgc tgt ccc cct aaa gcg aga ccc aca agc gag	384
Leu Gly Lys Lys Ser Arg Cys Pro Pro Lys Ala Arg Pro Thr Ser Glu	
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cgg gcc ccg tgg gcc cgg gga cga cgc ccc ctc ctg cgg cgt gga ctt	432
Arg Ala Pro Trp Ala Arg Gly Arg Arg Pro Leu Leu Arg Arg Gly Leu	
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Cys Arg Trp Pro Ser Arg Arg Arg Asn Met Ala Ser Lys Gly Ser Pro	
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Ser Cys Arg Leu Val Phe Cys Leu Leu Ile Ser Ala Ala Val Leu Arg	
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Pro Gly Leu Gly Trp Tyr Thr Val Asn Ser Ala Tyr Gly Asp Thr Ile	
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gtc atg cct tgc aga ctg gat gta cct cag aac ctc atg ttt ggc aaa	624
Val Met Pro Cys Arg Leu Asp Val Pro Gln Asn Leu Met Phe Gly Lys	
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B ₁ tgg aaa tat gaa aag cct gat ggg tcc cca gta ttt att gca ttc aga	672
Trp Lys Tyr Glu Lys Pro Asp Gly Ser Pro Val Phe Ile Ala Phe Arg	
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Ser Ser Thr Lys Lys Ser Val Gln Tyr Asp Asp Val Pro Glu Tyr Lys	
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gac aga ctg agc ctc tca gaa aac tac act ctg tct atc aac aat gca	768
Asp Arg Leu Ser Leu Ser Glu Asn Tyr Thr Leu Ser Ile Asn Asn Ala	
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aag atc agt gac gaa aag aga ttt gtg tgc atg cta gtg acc gag gac	816
Lys Ile Ser Asp Glu Lys Arg Phe Val Cys Met Leu Val Thr Glu Asp	
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Asn Val Phe Glu Ala Pro Thr Leu Val Lys Val Phe Lys Gln Pro Ser	
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Lys Pro Glu Ile Val Asn Arg Ala Ala Phe Leu Glu Thr Glu Gln Leu	
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Ile	Thr	Trp	Tyr	Arg	Asn	Gly	Lys	Val	Leu	Gln	Pro	Val	Asp	Gly	Glu		
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gtg	tcc	ata	ctt	ttt	aaa	aag	gaa	att	gat	cca	ggg	act	cag	ttg	tat	1056	
Val	Ser	Ile	Leu	Phe	Lys	Lys	Glu	Ile	Asp	Pro	Gly	Thr	Gln	Leu	Tyr		
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Thr	Met	Thr	Ser	Ser	Leu	Glu	Tyr	Lys	Thr	Thr	Lys	Ser	Asp	Ile	Gln		
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Met	Pro	Phe	Thr	Cys	Ser	Val	Thr	Tyr	Tyr	Gly	Pro	Ser	Gly	Gln	Lys		
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aca	att	tat	tct	gaa	caa	gca	atc	ttt	gat	att	tac	tat	cct	aca	gag	1200	
Thr	Ile	Tyr	Ser	Glu	Gln	Ala	Ile	Phe	Asp	Ile	Tyr	Tyr	Pro	Thr	Glu		
			235				240						245				
cag	gtg	aca	ata	caa	gta	ctg	cca	cca	aaa	aat	gcc	atc	aaa	gaa	ggg	1248	
Gln	Val	Thr	Ile	Gln	Val	Leu	Pro	Pro	Lys	Asn	Ala	Ile	Lys	Glu	Gly		
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gac	aac	atc	acc	ctt	cag	tgc	ttg	ggg	aat	ggc	aac	cca	cct	cct	gag	1296	
Asp	Asn	Ile	Thr	Leu	Gln	Cys	Leu	Gly	Asn	Gly	Asn	Pro	Pro	Pro	Glu		
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gag	ttc	atg	ttt	tac	tta	cca	ggg	cag	gct	gaa	ggc	ata	aga	agc	tca	1344	
Glu	Phe	Met	Phe	Tyr	Leu	Pro	Gly	Gln	Ala	Glu	Gly	Ile	Arg	Ser	Ser		
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aac	act	tac	aca	ctg	aca	gac	gtg	aga	cgc	aat	gcc	acc	ggg	gac	tac	1392	
Asn	Thr	Tyr	Thr	Leu	Thr	Asp	Val	Arg	Arg	Asn	Ala	Thr	Gly	Asp	Tyr		
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aaa	tgt	tct	ctc	atc	gac	caa	aga	aac	atg	gca	gct	tca	aca	acc	atc	1440	
Lys	Cys	Ser	Leu	Ile	Asp	Gln	Arg	Asn	Met	Ala	Ala	Ser	Thr	Thr	Ile		
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act	gtt	cac	tac	ttg	gat	tta	tcc	tta	aac	cca	agt	ggg	gaa	gtg	acc	1488	
Thr	Val	His	Tyr	Leu	Asp	Leu	Ser	Leu	Asn	Pro	Ser	Gly	Glu	Val	Thr		
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aag	cag	atc	ggg	gat	acc	ctg	cct	gtg	tct	tgc	aca	ata	tct	gca	agt	1536	
Lys	Gln	Ile	Gly	Asp	Thr	Leu	Pro	Val	Ser	Cys	Thr	Ile	Ser	Ala	Ser		
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Arg	Asn	Ala	Thr	Val	Val	Trp	Met	Lys	Asp	Asn	Ile	Arg	Leu	Arg	Ser		
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agt	cca	tcc	ttt	tct	agt	ctt	cat	tat	cag	gat	gct	ggg	aac	tat	gtc	1632	
Ser	Pro	Ser	Phe	Ser	Ser	Leu	His	Tyr	Gln	Asp	Ala	Gly	Asn	Tyr	Val		

B.

	380	385	390	
	tgt gaa act gct ctt cag gag gtt	gag gga ctg aag aaa agg gag tcg	1680	
	Cys Glu Thr Ala Leu Gln Glu Val	Glu Gly Leu Lys Lys Arg Glu Ser		
	395	400	405	
	ctg acc ctc atc gta gaa gga aaa	cct caa atc aaa atg aca aag aaa	1728	
	Leu Thr Leu Ile Val Glu Gly Lys	Pro Gln Ile Lys Met Thr Lys Lys		
	410	415	420	
	act gat ccc agt gga ctg tct aag	act ata atc tgc cat gtg gaa ggg	1776	
	Thr Asp Pro Ser Gly Leu Ser Lys	Thr Ile Ile Cys His Val Glu Gly		
	425	430	435	
	ttt cca aag cca gct ata cag tgg	acc att acc ggc agt gga agc gtc	1824	
	Phe Pro Lys Pro Ala Ile Gln Trp	Thr Ile Thr Gly Ser Gly Ser Val		
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	ata aac caa aca gag gag tct cct	tat att aat ggc agg tat tat agt	1872	
	Ile Asn Gln Thr Glu Glu Ser Pro	Tyr Ile Asn Gly Arg Tyr Tyr Ser		
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	aaa att atc att tcc cct gag gag	aat gtt aca tta act tgc aca gca	1920	
	Lys Ile Ile Ile Ser Pro Glu Glu	Asn Val Thr Leu Thr Cys Thr Ala		
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	gaa aac caa ctg gag aga aca gta	aac tcc ctg aat gtc tct gcg ata	1968	
	Glu Asn Gln Leu Glu Arg Thr Val	Asn Ser Leu Asn Val Ser Ala Ile		
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B ₁	agt att cca gaa cac gat gag gca	gac gat ata agt gat gaa aat aga	2016	
	Ser Ile Pro Glu His Asp Glu Ala	Asp Asp Ile Ser Asp Glu Asn Arg		
	505	510	515	
	gaa aag gtg aat gac cag gcc aaa	cta att gtg ggc att gtg gtt ggt	2064	
	Glu Lys Val Asn Asp Gln Ala Lys	Leu Ile Val Gly Ile Val Val Gly		
	520	525	530	535
	ctc ctc ctc gcc gcc ctc gtc gcc	ggt gtc gtc tac tgg ctg tac atg	2112	
	Leu Leu Leu Ala Ala Leu Val Ala	Gly Val Val Tyr Trp Leu Tyr Met		
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	aag aaa tcg aaa act gca tca aaa	cat gca aaa aaa aaa aaa aaa	2160	
	Lys Lys Ser Lys Thr Ala Ser Lys	His Ala Lys Lys Lys Lys Lys		
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<221> SIGNAL
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Ser Pro Leu Gln Glu Glu Lys Leu Leu Gly Asp Ser Ser Gln Lys Glu
-120 -115 -110 -105
Thr Ala Ser Thr Leu Thr Asp Tyr Ser Val Ser Trp Asn Lys Arg Val
-100 -95 -90
Ala Arg Leu Gly Ser Ser Ser Gln Arg Arg Gly Arg Val Trp Arg Gly
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Glu Gly Gly Val Ala Gly Ser Ala Trp Arg Lys Val Ala Cys Gly Thr
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Asp Pro Thr Ala Gln Arg His Ser Ala Arg Gly Ile Val Cys Leu Gly
-55 -50 -45
Lys Lys Ser Arg Cys Pro Pro Lys Ala Arg Pro Thr Ser Glu Arg Ala
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Pro Trp Ala Arg Gly Arg Arg Pro Leu Leu Arg Arg Gly Leu Cys Arg
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Trp Pro Ser Arg Arg Arg Asn Met Ala Ser Lys Gly Ser Pro Ser Cys
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Arg Leu Val Phe Cys Leu Leu Ile Ser Ala Ala Val Leu Arg Pro Gly
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Leu Gly Trp Tyr Thr Val Asn Ser Ala Tyr Gly Asp Thr Ile Val Met
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Pro Cys Arg Leu Asp Val Pro Gln Asn Leu Met Phe Gly Lys Trp Lys
45 50 55
Tyr Glu Lys Pro Asp Gly Ser Pro Val Phe Ile Ala Phe Arg Ser Ser
60 65 70
Thr Lys Lys Ser Val Gln Tyr Asp Asp Val Pro Glu Tyr Lys Asp Arg
75 80 85
Leu Ser Leu Ser Glu Asn Tyr Thr Leu Ser Ile Asn Asn Ala Lys Ile
90 95 100
Ser Asp Glu Lys Arg Phe Val Cys Met Leu Val Thr Glu Asp Asn Val
105 110 115 120
Phe Glu Ala Pro Thr Leu Val Lys Val Phe Lys Gln Pro Ser Lys Pro
125 130 135
Glu Ile Val Asn Arg Ala Ala Phe Leu Glu Thr Glu Gln Leu Lys Lys
140 145 150
Leu Gly Asp Cys Ile Ser Arg Asp Ser Tyr Pro Asp Gly Asn Ile Thr
155 160 165
Trp Tyr Arg Asn Gly Lys Val Leu Gln Pro Val Asp Gly Glu Val Ser
170 175 180
Ile Leu Phe Lys Lys Glu Ile Asp Pro Gly Thr Gln Leu Tyr Thr Met
185 190 195 200
Thr Ser Ser Leu Glu Tyr Lys Thr Thr Lys Ser Asp Ile Gln Met Pro
205 210 215
Phe Thr Cys Ser Val Thr Tyr Tyr Gly Pro Ser Gly Gln Lys Thr Ile
220 225 230
Tyr Ser Glu Gln Ala Ile Phe Asp Ile Tyr Tyr Pro Thr Glu Gln Val
235 240 245
Thr Ile Gln Val Leu Pro Pro Lys Asn Ala Ile Lys Glu Gly Asp Asn
250 255 260
Ile Thr Leu Gln Cys Leu Gly Asn Gly Asn Pro Pro Pro Glu Glu Phe

265 270 275 280
 Met Phe Tyr Leu Pro Gly Gln Ala Glu Gly Ile Arg Ser Ser Asn Thr
 285 290 295
 Tyr Thr Leu Thr Asp Val Arg Arg Asn Ala Thr Gly Asp Tyr Lys Cys
 300 305 310
 Ser Leu Ile Asp Gln Arg Asn Met Ala Ala Ser Thr Thr Ile Thr Val
 315 320 325
 His Tyr Leu Asp Leu Ser Leu Asn Pro Ser Gly Glu Val Thr Lys Gln
 330 335 340
 Ile Gly Asp Thr Leu Pro Val Ser Cys Thr Ile Ser Ala Ser Arg Asn
 345 350 355 360
 Ala Thr Val Val Trp Met Lys Asp Asn Ile Arg Leu Arg Ser Ser Pro
 365 370 375
 Ser Phe Ser Ser Leu His Tyr Gln Asp Ala Gly Asn Tyr Val Cys Glu
 380 385 390
 Thr Ala Leu Gln Glu Val Glu Gly Leu Lys Lys Arg Glu Ser Leu Thr
 395 400 405
 Leu Ile Val Glu Gly Lys Pro Gln Ile Lys Met Thr Lys Lys Thr Asp
 410 415 420
 Pro Ser Gly Leu Ser Lys Thr Ile Ile Cys His Val Glu Gly Phe Pro
 425 430 435 440
 Lys Pro Ala Ile Gln Trp Thr Thr Ile Thr Gly Ser Gly Ser Val Ile Asn
 445 450 455
 Gln Thr Glu Glu Ser Pro Tyr Ile Asn Gly Arg Tyr Tyr Ser Lys Ile
 460 465 470
 Ile Ile Ser Pro Glu Glu Asn Val Thr Leu Thr Cys Thr Ala Glu Asn
 475 480 485
 Gln Leu Glu Arg Thr Val Asn Ser Leu Asn Val Ser Ala Ile Ser Ile
 490 495 500
 Pro Glu His Asp Glu Ala Asp Ile Ser Asp Glu Asn Arg Glu Lys
 505 510 515 520
 Val Asn Asp Gln Ala Lys Leu Ile Val Gly Ile Val Val Gly Leu Leu
 525 530 535
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 540 545 550
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 555 560 565
 Lys Gly Gly Arg Asp
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 ctccgcgcgc agt atg gcg ccc ccc aag gcc ctc gcg ttc ggg ctc ctg 169
 Met Ala Pro Pro Lys Ala Leu Ala Phe Gly Leu Leu
 1 5 10

 ctc gcg gtg gtc acg gcg acg ctg gcc gca gct cag aaa gac tgt gtc 217

Leu	Ala	Val	Val	Thr	Ala	Thr	Leu	Ala	Ala	Ala	Gln	Lys	Asp	Cys	Val		
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tgt	aac	aac	tac	aag	ctg	acg	tca	cgg	tgc	tat	gag	aat	gag	aat	ggg	265	
Cys	Asn	Asn	Tyr	Lys	Leu	Thr	Ser	Arg	Cys	Tyr	Glu	Asn	Glu	Asn	Gly		
	30					35					40						
gaa	tgc	cag	tgt	act	tcc	tat	ggg	aca	caa	aat	act	gtc	att	tgc	tcc	313	
Glu	Cys	Gln	Cys	Thr	Ser	Tyr	Gly	Thr	Gln	Asn	Thr	Val	Ile	Cys	Ser		
	45				50					55					60		
aaa	ctg	gca	tcc	aag	tgc	ttg	gtg	atg	aag	gcg	gag	atg	act	cac	agc	361	
Lys	Leu	Ala	Ser	Lys	Cys	Leu	Val	Met	Lys	Ala	Glu	Met	Thr	His	Ser		
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aag	tct	ggg	agg	agg	atg	aaa	ccc	gag	ggg	gcg	atc	cag	aac	aac	gac	409	
Lys	Ser	Gly	Arg	Arg	Met	Lys	Pro	Glu	Gly	Ala	Ile	Gln	Asn	Asn	Asp		
			80					85					90				
ggg	ctg	tat	gat	ccc	gag	tgt	gac	gag	caa	ggg	ctc	ttc	aaa	gcc	aag	457	
Gly	Leu	Tyr	Asp	Pro	Glu	Cys	Asp	Glu	Gln	Gly	Leu	Phe	Lys	Ala	Lys		
		95					100					105					
cag	tgc	aac	ggc	acc	gcc	acg	tgc	tgg	tgc	gtg	aac	acc	gcg	ggg	gtc	505	
Gln	Cys	Asn	Gly	Thr	Ala	Thr	Cys	Trp	Cys	Val	Asn	Thr	Ala	Gly	Val		
	110					115					120						
cgg	aga	acc	gac	aag	gac	acg	gag	atc	acg	tgc	tcc	gag	aga	gtg	agg	553	
Arg	Arg	Thr	Asp	Lys	Asp	Thr	Glu	Ile	Thr	Cys	Ser	Glu	Arg	Val	Arg		
	125				130					135					140		
acc	tac	tgg	atc	atc	att	gag	ctc	aaa	cac	aaa	gaa	aga	gca	cag	cct	601	
Thr	Tyr	Trp	Ile	Ile	Ile	Glu	Leu	Lys	His	Lys	Glu	Arg	Ala	Gln	Pro		
				145					150					155			
tat	aac	ttc	gag	agt	ttg	cat	act	gca	ctt	cag	gac	aca	ttt	gca	tct	649	
Tyr	Asn	Phe	Glu	Ser	Leu	His	Thr	Ala	Leu	Gln	Asp	Thr	Phe	Ala	Ser		
			160					165					170				
cga	tac	atg	ctg	aat	ccg	aaa	ttt	atc	aaa	agt	att	atg	tat	gag	aat	697	
Arg	Tyr	Met	Leu	Asn	Pro	Lys	Phe	Ile	Lys	Ser	Ile	Met	Tyr	Glu	Asn		
		175					180					185					
aat	gtt	atc	act	att	gat	ttg	atg	caa	aac	tct	tct	cag	aag	act	caa	745	
Asn	Val	Ile	Thr	Ile	Asp	Leu	Met	Gln	Asn	Ser	Ser	Gln	Lys	Thr	Gln		
	190					195					200						
gat	gat	gtg	gac	ata	gct	gat	gtg	gct	tac	tat	ttt	gag	aaa	gat	gta	793	
Asp	Asp	Val	Asp	Ile	Ala	Asp	Val	Ala	Tyr	Tyr	Phe	Glu	Lys	Asp	Val		
	205				210					215					220		
aag	ggg	gag	tcc	ttg	ttc	cat	tca	tct	aag	agc	atg	gac	ctg	agg	gtg	841	
Lys	Gly	Glu	Ser	Leu	Phe	His	Ser	Ser	Lys	Ser	Met	Asp	Leu	Arg	Val		
				225					230				235				
aac	ggg	gag	ctc	ctc	gat	ctg	gac	ccc	ggg	cag	act	ctg	att	tac	tac	889	
Asn	Gly	Glu	Leu	Leu	Asp	Leu	Asp	Pro	Gly	Gln	Thr	Leu	Ile	Tyr	Tyr		

240	245	250	
gtc gat gaa aag gcc ccg gag ttt tcc atg cag ggc ctc acg gct ggg			937
Val Asp Glu Lys Ala Pro Glu Phe Ser Met Gln Gly Leu Thr Ala Gly			
255	260	265	
atc atc gcc gtc att gtc gtg gtg gtg tta gca gtc att gcg ggg att			985
Ile Ile Ala Val Ile Val Val Val Val Leu Ala Val Ile Ala Gly Ile			
270	275	280	
gtt gtc ctg gtt ata tct aca agg aag aga tca gca aaa tat gag aag			1033
Val Val Leu Val Ile Ser Thr Arg Lys Arg Ser Ala Lys Tyr Glu Lys			
285	290	295	300
gct gag ata aag gag atg ggt gag ata cac aga gag ctc aat gcc			1078
Ala Glu Ile Lys Glu Met Gly Glu Ile His Arg Glu Leu Asn Ala			
305	310	315	
taaccaacca tgccgtgtgc tgcaactgagg agggagccac cggacggaaa tggcgaagaa			1138
ctcaggttgc aaacggatag acctggggag gatggagacc ttccgaggggt cactgctttg			1198
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 <213> Rattus rattus

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Lys Leu Thr Ser Arg Cys Tyr Glu Asn Glu Asn Gly Glu Cys Gln Cys			
35	40	45	
Thr Ser Tyr Gly Thr Gln Asn Thr Val Ile Cys Ser Lys Leu Ala Ser			
50	55	60	
Lys Cys Leu Val Met Lys Ala Glu Met Thr His Ser Lys Ser Gly Arg			
65	70	75	80
Arg Met Lys Pro Glu Gly Ala Ile Gln Asn Asn Asp Gly Leu Tyr Asp			
85	90	95	
Pro Glu Cys Asp Glu Gln Gly Leu Phe Lys Ala Lys Gln Cys Asn Gly			
100	105	110	
Thr Ala Thr Cys Trp Cys Val Asn Thr Ala Gly Val Arg Thr Asp			
115	120	125	
Lys Asp Thr Glu Ile Thr Cys Ser Glu Arg Val Arg Thr Tyr Trp Ile			
130	135	140	
Ile Ile Glu Leu Lys His Lys Glu Arg Ala Gln Pro Tyr Asn Phe Glu			
145	150	155	160
Ser Leu His Thr Ala Leu Gln Asp Thr Phe Ala Ser Arg Tyr Met Leu			
165	170	175	
Asn Pro Lys Phe Ile Lys Ser Ile Met Tyr Glu Asn Asn Val Ile Thr			
180	185	190	
Ile Asp Leu Met Gln Asn Ser Ser Gln Lys Thr Gln Asp Asp Val Asp			
195	200	205	
Ile Ala Asp Val Ala Tyr Tyr Phe Glu Lys Asp Val Lys Gly Glu Ser			
210	215	220	

Leu	Phe	His	Ser	Ser	Lys	Ser	Met	Asp	Leu	Arg	Val	Asn	Gly	Glu	Leu
225					230				235						240
Leu	Asp	Leu	Asp	Pro	Gly	Gln	Thr	Leu	Ile	Tyr	Tyr	Val	Asp	Glu	Lys
				245				250						255	
Ala	Pro	Glu	Phe	Ser	Met	Gln	Gly	Leu	Thr	Ala	Gly	Ile	Ile	Ala	Val
			260					265					270		
Ile	Val	Val	Val	Val	Leu	Ala	Val	Ile	Ala	Gly	Ile	Val	Val	Leu	Val
		275					280						285		
Ile	Ser	Thr	Arg	Lys	Arg	Ser	Ala	Lys	Tyr	Glu	Lys	Ala	Glu	Ile	Lys
	290					295					300				
Glu	Met	Gly	Glu	Ile	His	Arg	Glu	Leu	Asn	Ala					
305					310					315					

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<400> 5

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			20					25					30		
Lys	Leu	Thr	Ser	Arg	Cys	Tyr	Glu	Asn	Glu	Asn	Gly	Glu	Cys	Gln	Cys
		35					40					45			
Thr	Ser	Tyr	Gly	Thr	Gln	Asn	Thr	Val	Ile	Cys	Ser	Lys	Leu	Ala	Ser
	50					55					60				
Lys	Cys	Leu	Val	Met	Lys	Ala	Glu	Met	Thr	His	Ser	Lys	Ser	Gly	Arg
65					70					75					80
Arg	Met	Lys	Pro	Glu	Gly	Ala	Ile	Gln	Asn	Asn	Asp	Gly	Leu	Tyr	Asp
				85					90					95	
Pro	Glu	Cys	Asp	Glu	Gln	Gly	Leu	Phe	Lys	Ala	Lys	Gln	Cys	Asn	Gly
			100					105					110		
Thr	Ala	Thr	Cys	Trp	Cys	Val	Asn	Thr	Ala	Gly	Val	Arg	Arg	Thr	Asp
		115					120					125			
Lys	Asp	Thr	Glu	Ile	Thr	Cys	Ser	Glu	Arg	Val	Arg	Thr	Tyr	Trp	Ile
	130					135						140			
Ile	Ile	Glu	Leu	Lys	His	Lys	Glu	Arg	Ala	Gln	Pro	Tyr	Asn	Phe	Glu
145					150					155					160
Ser	Leu	His	Thr	Ala	Leu	Gln	Asp	Thr	Phe	Ala	Ser	Arg	Tyr	Met	Leu
				165					170					175	
Asn	Pro	Lys	Phe	Ile	Lys	Ser	Ile	Met	Tyr	Glu	Asn	Asn	Val	Ile	Thr
			180					185					190		
Ile	Asp	Leu	Met	Gln	Asn	Ser	Ser	Gln	Lys	Thr	Gln	Asp	Asp	Val	Asp
	195						200					205			
Ile	Ala	Asp	Val	Ala	Tyr	Tyr	Phe	Glu	Lys	Asp	Val	Lys	Gly	Glu	Ser
	210					215					220				
Leu	Phe	His	Ser	Ser	Lys	Ser	Met	Asp	Leu	Arg	Val	Asn	Gly	Glu	Leu
225					230				235						240
Leu	Asp	Leu	Asp	Pro	Gly	Gln	Thr	Leu	Ile	Tyr	Tyr	Val	Asp	Glu	Lys
				245				250						255	
Ala	Pro	Glu	Phe	Ser	Met	Gln	Gly	Leu	Thr	Ala	Gly	Ile	Ile	Ala	Val
			260					265					270		
Ile	Val	Val	Val	Val	Leu	Ala	Val	Ile	Ala	Gly	Ile	Val	Val	Leu	Val
		275					280					285			
Ile	Ser	Thr	Arg	Lys	Arg	Ser	Ala	Lys	Tyr	Glu	Lys	Ala	Glu	Ile	Lys
	290					295					300				

Glu Met Gly Glu Ile His Arg Glu Leu Asn Ala
 305 310 315

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 <211> 314
 <212> PRT
 <213> Mus musculus

<400> 6
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 Lys Leu Ala Thr Ser Cys Ser Leu Asn Glu Tyr Gly Glu Cys Gln Cys
 35 40 45
 Thr Ser Tyr Gly Thr Gln Asn Thr Val Ile Cys Ser Lys Leu Ala Ser
 50 55 60
 Lys Cys Leu Ala Met Lys Ala Glu Met Thr His Ser Lys Ser Gly Arg
 65 70 75 80
 Arg Ile Lys Pro Glu Gly Ile Gln Asn Asn Asp Gly Leu Tyr Asp Pro
 85 90 95
 Asp Cys Asp Glu Gln Gly Leu Phe Lys Ala Lys Gln Cys Asn Gly Thr
 100 105 110
 Ala Thr Cys Trp Cys Val Asn Thr Ala Gly Val Arg Arg Thr Asp Lys
 115 120 125
 Asp Thr Glu Ile Thr Cys Ser Glu Arg Val Arg Thr Tyr Trp Ile Ile
 130 135 140
 Ile Glu Leu Lys His Lys Glu Arg Glu Ser Pro Tyr Asp His Gln Ser
 145 150 155 160
 Leu Gln Thr Ala Leu Gln Glu Ala Phe Thr Ser Arg Tyr Lys Leu Asn
 165 170 175
 Gln Lys Phe Ile Lys Asn Ile Met Tyr Glu Asn Asn Val Ile Thr Ile
 180 185 190
 Asp Leu Met Gln Asn Ser Ser Gln Lys Thr Gln Asp Asp Val Asp Ile
 195 200 205
 Ala Asp Val Ala Tyr Tyr Phe Glu Lys Asp Val Lys Gly Glu Ser Leu
 210 215 220
 Phe His Ser Ser Lys Ser Met Asp Leu Arg Val Asn Gly Glu Pro Leu
 225 230 235 240
 Asp Leu Asp Pro Gly Gln Thr Leu Ile Tyr Tyr Val Asp Glu Lys Ala
 245 250 255
 Pro Glu Phe Ser Met Gln Gly Leu Thr Ala Gly Ile Ile Ala Val Ile
 260 265 270
 Val Val Val Ser Leu Ala Val Ile Ala Gly Ile Val Val Leu Val Ile
 275 280 285
 Ser Thr Arg Lys Lys Ser Ala Lys Tyr Glu Lys Ala Glu Ile Lys Glu
 290 295 300
 Met Gly Glu Ile His Arg Glu Leu Asn Ala
 305 310

<210> 7
 <211> 314
 <212> PRT
 <213> Homo sapien

<400> 7
 Met Ala Pro Pro Gln Val Leu Ala Phe Gly Leu Leu Leu Ala Ala Ala

1				5				10					15			
Thr	Ala	Thr	Phe	Ala	Ala	Ala	Gln	Glu	Glu	Cys	Val	Cys	Glu	Asn	Tyr	
			20					25					30			
Lys	Leu	Ala	Val	Asn	Cys	Phe	Val	Asn	Asn	Asn	Arg	Gln	Cys	Gln	Cys	
		35					40					45				
Thr	Ser	Val	Gly	Ala	Gln	Asn	Thr	Val	Ile	Cys	Ser	Lys	Leu	Ala	Ala	
	50					55					60					
Lys	Cys	Leu	Val	Met	Lys	Ala	Glu	Met	Asn	Gly	Ser	Lys	Leu	Gly	Arg	
65				70					75						80	
Arg	Ala	Lys	Pro	Glu	Gly	Ala	Leu	Gln	Asn	Asn	Asp	Gly	Leu	Tyr	Asp	
			85					90						95		
Pro	Asp	Cys	Asp	Glu	Ser	Gly	Leu	Phe	Lys	Ala	Lys	Gln	Cys	Asn	Gly	
		100					105					110				
Thr	Ser	Thr	Cys	Trp	Cys	Val	Asn	Thr	Ala	Gly	Val	Arg	Arg	Thr	Asp	
		115					120					125				
Lys	Asp	Thr	Glu	Ile	Thr	Cys	Ser	Glu	Arg	Val	Arg	Thr	Tyr	Trp	Ile	
	130					135					140					
Ile	Ile	Glu	Leu	Lys	His	Lys	Ala	Arg	Glu	Lys	Pro	Tyr	Asp	Ser	Lys	
145				150						155					160	
Ser	Leu	Arg	Thr	Ala	Leu	Gln	Lys	Glu	Ile	Thr	Thr	Arg	Tyr	Gln	Leu	
			165					170						175		
Asp	Pro	Lys	Phe	Ile	Thr	Ser	Ile	Leu	Tyr	Glu	Asn	Asn	Val	Ile	Thr	
		180					185						190			
Ile	Asp	Leu	Val	Gln	Asn	Ser	Ser	Gln	Lys	Thr	Gln	Asn	Asp	Val	Asp	
	195					200						205				
Ile	Ala	Asp	Val	Ala	Tyr	Tyr	Phe	Glu	Lys	Asp	Val	Lys	Gly	Glu	Ser	
	210					215					220					
Leu	Phe	His	Ser	Lys	Lys	Met	Asp	Leu	Thr	Val	Asn	Gly	Glu	Gln	Leu	
225				230						235					240	
Asp	Leu	Asp	Pro	Gly	Gln	Thr	Leu	Ile	Tyr	Tyr	Val	Asp	Glu	Lys	Ala	
			245					250						255		
Pro	Glu	Phe	Ser	Met	Gln	Gly	Leu	Lys	Ala	Gly	Val	Ile	Ala	Val	Ile	
		260					265						270			
Val	Val	Val	Val	Met	Ala	Val	Val	Ala	Gly	Ile	Val	Val	Leu	Val	Ile	
		275					280					285				
Ser	Arg	Lys	Lys	Arg	Met	Ala	Lys	Tyr	Glu	Lys	Ala	Glu	Ile	Lys	Glu	
	290				295						300					
Met	Gly	Glu	Met	His	Arg	Glu	Leu	Asn	Ala							
305					310											

<210> 8
 <211> 323
 <212> PRT
 <213> Homo sapien

<400> 8

Met	Ala	Arg	Gly	Pro	Gly	Leu	Ala	Pro	Pro	Pro	Leu	Arg	Leu	Pro	Leu	
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Leu	Leu	Leu	Val	Leu	Ala	Ala	Val	Thr	Gly	His	Thr	Ala	Ala	Gln	Asp	
		20						25				30				
Asn	Cys	Thr	Cys	Pro	Thr	Asn	Lys	Met	Thr	Val	Cys	Ser	Pro	Asp	Gly	
	35					40					45					
Pro	Gly	Gly	Arg	Cys	Gln	Cys	Arg	Ala	Leu	Gly	Ser	Gly	Met	Ala	Val	
	50					55					60					
Asp	Cys	Ser	Thr	Leu	Thr	Ser	Lys	Cys	Leu	Leu	Leu	Lys	Ala	Arg	Met	
65				70					75					80		
Ser	Ala	Pro	Lys	Asn	Ala	Arg	Thr	Leu	Val	Arg	Pro	Ser	Glu	His	Ala	

85 90 95
 Leu Val Asp Asn Asp Gly Leu Tyr Asp Pro Asp Cys Asp Pro Glu Gly
 100 105 110
 Arg Phe Lys Ala Arg Gln Cys Asn Gln Thr Ser Val Cys Trp Cys Val
 115 120 125
 Asn Ser Val Gly Val Arg Arg Thr Asp Lys Gly Asp Leu Ser Leu Arg
 130 135 140
 Cys Asp Asp Leu Val Arg Thr His His Ile Leu Ile Asp Leu Arg His
 145 150 155 160
 Arg Pro Thr Ala Gly Ala Phe Asn His Ser Asp Leu Asp Ala Glu Leu
 165 170 175
 Arg Arg Leu Phe Arg Glu Arg Tyr Arg Leu His Pro Lys Phe Val Ala
 180 185 190
 Ala Val His Tyr Glu Gln Pro Thr Ile Gln Ile Glu Leu Arg Gln Asn
 195 200 205
 Thr Ser Gln Lys Ala Ala Gly Glu Val Asp Ile Gly Asp Ala Ala Tyr
 210 215 220
 Tyr Phe Glu Arg Asp Ile Lys Gly Glu Ser Leu Phe Gln Gly Arg Gly
 225 230 235 240
 Gly Leu Asp Leu Arg Val Arg Gly Glu Pro Leu Gln Val Glu Arg Thr
 245 250 255
 Leu Ile Tyr Tyr Leu Asp Glu Ile Pro Pro Lys Phe Ser Met Lys Arg
 260 265 270
 Leu Thr Ala Gly Leu Ile Ala Val Ile Val Val Val Val Val Ala Leu
 275 280 285
 Val Ala Gly Met Ala Val Leu Val Ile Thr Asn Arg Arg Lys Ser Gly
 290 295 300
 Lys Tyr Lys Lys Val Glu Ile Lys Glu Leu Gly Glu Leu Arg Lys Glu
 305 310 315 320
 Pro Ser Leu